IN THE CLAIMS:

At page 8, line 1, please cancel "CLAIMS" and substitute:'

--**WE CLAIM AS OUR INVENTION**:-- therefor.

Cancel claims 1-26.

1-26. (Cancelled)

Add the following new claims:

27. (New) An implantable medical apparatus for detecting diastolic heart failure (DHF) comprising:

a sensor adapted to interact with a heart to obtain information associated with functioning of the heart; and

a DHF determining device supplied with said information that detects a DHF state of the heart from said information by determining, as a DHF parameter, a time duration of a predetermined phase of diastole of the heart.

28. (New) An apparatus as claimed in claim 27 wherein said DHF determining device comprises a comparator that compares said time duration with an upper limit value and a lower limit value to obtain a comparison result, said comparison result being indicative of said DHF state.

29. (New) An apparatus as claimed in claim 27 wherein said DHF determining device comprises a calculating unit that calculates, from said information from said sensor, said time duration, as a time from an occurrence of peak blood flow velocity through the mitral valve of the heart to a time of occurrence of zero blood flow velocity through the mitral valve of the heart.

30. (New) An apparatus as claimed in claim 27 wherein said calculating unit determines said time duration by extrapolating said mitral blood flow velocity to zero, if an actual occurrence of zero blood flow velocity

through the mitral valve does not occur before an atrial contraction of the heart.

31. (New) An apparatus as claimed in claim 27 wherein said calculating unit extrapolates the blood flow velocity to zero by determining a time derivative of blood flow velocity through the mitral valve shortly after said occurrence of said peak blood flow velocity through the mitral valve.

32. (New) An apparatus as claimed in claim 27 wherein said sensor senses an IEGM signal from the heart, and wherein said calculating unit calculates the time of occurrence of said peak blood flow velocity through the mitral valve to the time of occurrence of zero blood flow velocity through the mitral valve from said IEGM.

33. (New) An apparatus as claimed in claim 29 wherein said sensor is an impedance sensor that senses an impedance of the heart, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said impedance.

34. (New) An apparatus as claimed in claim 29 wherein said sensor is a sound sensor that detects a sound signal associated with said functioning of the heart, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said sound signal.

35. (New) An apparatus as claimed in claim 29 wherein said sensor is an accelerometer that detects an activity signal representing activity of a subject in whom said DHF determining device is implanted, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said activity signal.

36. (New) An apparatus as claimed in claim 27 wherein said DHF determining device comprises a calculating unit that calculates, as said time

duration, and isovolumic relaxation time (IVRT) from said information from said sensor.

37. (New) An apparatus as claimed in claim 36 wherein said sensor detects an IEGM from the heart, and wherein said calculating unit determines said IVRT from said IEGM.

38. (New) An apparatus as claimed in claim 36 wherein said sensor is an impedance sensor that measures an impedance of the heart, and wherein said calculating unit calculates said IVRT from said impedance.

39. (New) An apparatus as claimed in claim 36 wherein said sensor is a sound sensor that detects a sound signal associated with said functioning of the heart, and wherein said calculating unit calculates said IVRT from said sound signal.

40. (New) An apparatus as claimed in claim 36 wherein said sensor is an accelerometer that detects an activity signal of a patient in whom said DHF determining device is implanted, and wherein said calculating unit calculates said IVRT from said activity signal.

41. (New) An apparatus as claimed in claim 29 wherein said DHF determining device determines said time duration respectively at predetermined time intervals, thereby obtaining a plurality of time durations, and comprises a memory in which said plurality of time durations are stored.

42. (New) An apparatus as claimed in claim 29 wherein said DHF determining device determines said time duration respectively at a plurality of predetermined time intervals, and comprises a comparator that compares each of said time durations to an upper limit value to identify a first plurality of time durations above said upper limit value and respective first magnitudes of respective deviations of said first plurality of time durations from said upper limit value, and a second plurality of time durations below said lower limit value and second magnitudes of deviations of said second plurality of time durations from said lower limit value, and comprises a memory in which said

first plurality of time durations, said first magnitudes, said second plurality of time durations, and said second magnitudes are stored.

43. (New) An apparatus as claimed in claim 29 wherein said DHF determining device determines said time duration at a plurality of different times, and determines changes in the respective time durations determined at said different times, and comprises a memory in which said changes are stored.

44. (New) An apparatus as claimed in claim 29 wherein said DHF determining device comprises a comparator that compares said time duration to an upper limit value and to a lower limit value, and comprises an alerting unit that emits a humanly perceptible alert if a deviation of said time duration from either of said upper limit value or said lower limit value exceeds a predetermined threshold value.

45. (New) An apparatus as claimed in claim 44 wherein said alerting unit triggers said alert if a length of time that said deviation exceeds said predetermined threshold value exceeds a predetermined length of time.

46. (New) An apparatus as claimed in claim 29 wherein said DHF determining device determines said time duration at respectively different times and detects a change in said time duration detected at respectively different times, and comprises a comparator that compares said change to a predetermined threshold value, and an alerting unit that emits a humanly perceptible alert if said change exceeds said predetermined threshold value.

47. (New) An implantable cardiac pacemaker comprising:

a pulse generator that emits stimulation pulses;

an electrode system adapted to interact with the heart of a subject to deliver said stimulation pulses to the heart in a pacing therapy regimen, a sensor adapted to interact with a heart to obtain information associated with functioning of the heart, and a DHF

determining device supplied with said information that detects a DHF state of the heart from said information by determining, as a DHF parameter, a time duration of a predetermined phase of diastole of the heart; and

a control unit connected to said DHF determining device and to said pulse generator, said control device controlling said pulse generator to modify said pacing therapy regimen dependent on said DHF parameter.

48. (New) A method for detecting diastolic heart failure (DHF) comprising:

a sensor adapted to interact with a heart to obtain information associated with functioning of the heart; and

a DHF determining device supplied with said information that detects a DHF state of the heart from said information by determining, as a DHF parameter, a time duration of a predetermined phase of diastole of the heart.

49. (New) A method as claimed in claim 27 wherein said DHF determining device comprises a comparator that compares said time duration with an upper limit value and a lower limit value to obtain a comparison result, said comparison result being indicative of said DHF state.

50. (New) A method as claimed in claim 27 wherein said DHF determining device comprises a calculating unit that calculates, from said information from said sensor, said time duration, as a time from an occurrence of peak blood flow velocity through the mitral valve of the heart to a time of occurrence of zero blood flow velocity through the mitral valve of the heart.

51. (New) A method as claimed in claim 27 wherein said calculating unit determines said time duration by extrapolating said mitral blood flow velocity to zero, if an actual occurrence of zero blood flow velocity through the mitral valve does not occur before an atrial contraction of the heart.

52. (New) A method as claimed in claim 27 wherein said calculating unit extrapolates the blood flow velocity to zero by determining a time derivative of blood flow velocity through the mitral valve shortly after said occurrence of said peak blood flow velocity through the mitral valve.

53. (New) A method as claimed in claim 27 wherein said sensor senses an IEGM signal from the heart, and wherein said calculating unit calculates the time of occurrence of said peak blood flow velocity through the mitral valve to the time of occurrence of zero blood flow velocity through the mitral valve from said IEGM.

54. (New) A method as claimed in claim 29 wherein said sensor is an impedance sensor that senses an impedance of the heart, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said impedance.

55. (New) A method as claimed in claim 29 wherein said sensor is a sound sensor that detects a sound signal associated with said functioning of the heart, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said sound signal.

56. (New) A method as claimed in claim 29 wherein said sensor is an accelerometer that detects an activity signal representing activity of a subject in whom said DHF determining device is implanted, and wherein said calculating unit calculates the time from the occurrence of said peak blood flow velocity through the mitral valve to zero blood flow velocity through the mitral valve from said activity signal.

57. (New) A method as claimed in claim 27 wherein said DHF determining device comprises a calculating unit that calculates, as said time duration, and isovolumic relaxation time (IVRT) from said information from said sensor.

58. (New) A method as claimed in claim 36 wherein said sensor detects an IEGM from the heart, and wherein said calculating unit determines said IVRT from said IEGM.

59. (New) A method as claimed in claim 36 wherein said sensor is an impedance sensor that measures an impedance of the heart, and wherein said calculating unit calculates said IVRT from said impedance.

60. (New) A method as claimed in claim 36 wherein said sensor is a sound sensor that detects a sound signal associated with said functioning of the heart, and wherein said calculating unit calculates said IVRT from said sound signal.

61. (New) A method as claimed in claim 36 wherein said sensor is an accelerometer that detects an activity signal of a patient in whom said DHF determining device is implanted, and wherein said calculating unit calculates said IVRT from said activity signal.

62. (New) A method as claimed in claim 29 wherein said DHF determining device determines said time duration respectively at predetermined time intervals, thereby obtaining a plurality of time durations, and comprises a memory in which said plurality of time durations are stored.

63. (New) An apparatus as claimed in claim 48 wherein said DHF determining device determines said time duration at a plurality of different times, and determines changes in the respective time durations determined at said different times, and comprises a memory in which said changes are stored.